

Claims

What is claimed is:

1. (Amended) An aluminum oxide catalyst for the hydrolytic decomposition of exhausted perfluoro-compounds by using water, wherein a surface of said
5 aluminum oxide is loaded with phosphorous (P) component at an aluminum/phosphorous mole ratio of 10 to 100.

2. The aluminum oxide catalyst according to claim 1, wherein said aluminum oxide is selected from the group consisting of gamma alumina, aluminum
10 trihydroxide, boehmite and pseudo-boehmite.

3. The aluminum oxide catalyst according to claim 1, wherein said phosphorous (P) component is selected from the group consisting of diammoniumhydrophosphate $((\text{NH}_3)_2\text{HPO}_4)$, ammoniumdihydrophosphate
15 $((\text{NH}_3)\text{H}_2\text{PO}_4)$, and phosphoric acid (H_3PO_4) .

4. (Amended) The aluminum oxide according to claim 1~~The exhausted perfluoro-compounds according to claim 1~~, wherein said perfluoro-compounds include at least one selected from the group consisting of CF_4 , CHF_3 , CH_2F_2 , C_2F_4 , C_2F_6 , C_3F_6 ,
20 C_3F_8 , C_4F_8 , C_4F_{10} , NF_3 and SF_6 .

5. (Amended) A method of catalytic decomposition of exhausted perfluoro-compounds, which comprises passing said exhausted perfluoro-compounds through said catalyst of claim 1 in the presence of water vapor at the temperature
25 range of 400-800°C.

6. The method according to claim 5, wherein said water vapor is contained at a

ART 34 AMDT

water vapor/perfluoro-compound mole ratio of 1 to 100.

7. The method according to claim 5, wherein oxygen is added at a concentration of 0-50% together with said water vapor.